

Press Release

Three research projects which will use advanced technologies to improve learning have just been approved by the Teaching and Learning Research Programme, the UK's biggest-ever initiative in education research.

The three are the first major projects supported by the TLRP's Technology-Enhanced Learning initiative. They will receive funding of about £1.5 million each over the next four years.

The three projects will be focussing in three different subject areas: science, mathematics and dentistry.

In science, Professor Mike Sharples of the University of Nottingham and Professor Eileen Scanlon of the Open University will lead a project to develop new ways of teaching 11-14 year olds. It will involve developing, testing and improving new designs for personal computers that support science learning between schools, homes and discovery centres.

Professor Sharples says: "The learning of science involves much more than acquiring facts and interpreting data. It is important for children to engage with science that affects their everyday lives. They need to assess evidence from many sources, take part in debates on topics of major public concern, and use new technologies to find, visualise and share knowledge."

In mathematics, a group led by Professor Richard Noss at the London Knowledge Lab (Institute of Education and Birkbeck) will be using technology to support teachers in encouraging 11-14 year-old students to create mathematical generalisations. The idea of generalisation is notoriously difficult for students, with the result that students routinely find themselves unable to understand what mathematics is about. The project aims to address this by building - together with teachers - computer tools that simultaneously support mathematical expression and collaboration.

Professor Noss says: "We are going to create computer systems that will let students build mathematical models of patterns, so that they see a point in expressing and sharing their ideas about generalisation online". The systems will produce an intelligent learning environment for students alongside adaptive pedagogical support for teachers.

In dentistry, a group led by Professor Margaret Cox of King's College London's Dental Institute (and Department of Education and Professional Studies) will be using IT to improve the skills of future dentists, dental hygienists and dental

nurses - with no trauma to patients who are being practised upon. Instead, the team will develop haptic, or touch-based methods using a "virtual mouth." At first it will be a real structure, which students work on with a robotic arm in front of a computer screen which provides feedback to their actions. Later on, the actions will be simulated through the use of the mouse and a Web-based environment so that more students can benefit from this innovative learning experience.

Professor Cox says: "As well as not needing patients in the earlier stages of training, this approach allows students to practice a technique as often as they need without embarrassment and apprehension when treating real patients. We will refine the methods as the project proceeds and similar haptic technology will also be able to be used in the future to help train doctors and veterinary surgeons."

Professor Andrew Pollard, Director of TLRP, said: "These important projects will help to ensure that future developments are based in excellent research and really do contribute to improved learning."

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The TLRP (www.tlrp.org) is the UK's biggest-ever research programme on education at all phases of life. Its budget is some £38 million from 2000 to 2011. The TLRP's main funders are the Higher Education Funding Council for England, the Scottish Executive, the Northern Ireland Executive, the Welsh Assembly and the Department for Education and Skills. HEFCE is the largest single funder. The TLRP is managed by the Economic and Social Research Council and this work on Technology-Enhanced Learning is also funded by the Engineering and Physical Sciences Research Council. It welcomes media inquiries about its work via Martin Ince.

The Economic and Social Research Council (ESRC) is the UK's largest funding agency for research and postgraduate training relating to social and economic issues. It provides independent, high quality, relevant research to business, the public sector and Government. The ESRC's planned total expenditure in 2006/7 is £169 million. At any one time the ESRC supports over 4,000 researchers and postgraduate students in academic institutions and research policy institutes. More at <http://www.esrcsocietytoday.ac.uk>

The Engineering and Physical Sciences Research Council (EPSRC) is the UK's main agency for funding research in engineering and the physical sciences. The EPSRC is investing £650 million this year in research and postgraduate training,

to help the nation handle the next generation of technological change. The areas covered range from information technology to structural engineering, and mathematics to materials science. This research forms the basis for future economic development in the UK and improvements for everyone's health, lifestyle and culture. EPSRC also actively promotes public awareness of science and engineering. EPSRC works alongside other Research Councils with responsibility for other areas of research. The Research Councils work collectively on issues of common concern via Research Councils UK. Website address for more information on EPSRC: www.epsrc.ac.uk/